

REMARKS

The Examiner has reopened prosecution in this case as a result of the Board's decision of February 20, 2003 and the remand set forth therein. The Examiner has set forth new grounds for rejection. Claims 1-8 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the prior art as set forth in the specification, page 1, lines 8-28 and in view of McComas et al. and Carr. Thereafter, claims 1-8 have been rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over Schiembob, Ryan or Ackermann in view of McComas et al. and Carr.

In response, the Applicants have (once again) amended claim 1 to specify that the honeycomb is comprised of metal. The long record in this case is not clear whether applicant's previous attempts to add this limitation have been successful, and have taken this opportunity to resubmit the same amendment at this time. For the reasons set forth below, Applicants respectfully request reconsideration of the Examiner's rejection.

The teachings of Schiembob, Ryan, Ackermann and McComas have been discussed at length in the previous papers in this particular case and reference is made to these papers for a discussion of the same. The Examiner now relies on a combination of the foregoing references as well as U.S. Patent No. 4,731,125 to Carr in formulating the present rejection. The '125 patent discloses a method for blast cleaning paint and other adhesive coatings from composite surfaces formed from a reinforced matrix material. A special soft media is used at a relative low pressure to prevent damage to the soft composite material. A preferred method calls for the use of the media having a Mohs scale hardness number of 3.0 or less. The media is pressurized to approximately 40 psi and directed at the composite surface to be cleaned.

At the outset, it is instructive to review the substance of the Board's decision of February 20, 2003. In that opinion, the references that were applied by the Examiner were the same references cited hereinabove, but for the addition of Carr. In sum, claims 1-8 stood rejected by the Examiner under 35 U.S.C. §103(a) as being unpatentable by McComas in view of Schiembob, Ryan or Ackermann. They were also rejected on the

same grounds as being unpatentable over Schiembob, Ryan or Ackermann in view of McComas.

5 The Board did not sustain the rejection of the claims under 35 U.S.C. § 103(a) on either grounds. The combined teachings of the prior art applied by the Examiner would only suggest that one of ordinary skill in the art of removing honeycomb and braze from a substrate would have done so by directing a liquid stream at the top of the honeycomb until the braze is exposed, as set forth by McComas. As the Board noted, the deficiency in the Examiner's rejection was the lack of any suggestion in the applied prior art for the recitation as set forth in Claim 1 of the liquid stream "striking the
10 substrate at the base of the honeycomb". Indeed, the Board noted that only the Applicant's disclosure, and not the applied prior art of record, taught or would have suggested of the liquid stream striking a substrate at the base of a liquid honeycomb.

137 The Examiner now has applied the same references in the same manner that has, in the past, been rejected by the Board, but now augmented by Carr. At the outset, Applicant notes that Carr is a clear case of non-analogous art. As is known by the Examiner, a reference must be considered as a whole, for all that it teaches. When viewed in its entirety, the problem that Carr addresses and the technology used by Carr to solve that problem are too far removed from that of the other combined references, and certainly the present invention. One skilled in the art of honeycomb removal
15 brazed on to jet engine turbine blades would not look to paint removal schemes for guidance.
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The thrust of the Carr method is to avoid damaging a soft substrate like composites or composite honeycomb structures while removing paint. In fact, the patent title is a "Media Blast Paint Removal System". Consequently, the Carr method is directed towards removing soft homogenous materials, like paint, that are not robustly fastened to the surface of an easily damaged substrate. Carr requires the use of media, preferably soft plastic particles, to remove the paint; the fluid stream itself contributing nothing to the removal process. Carr suggests an extremely low pressure of only 40 lbs. per square inch at the nozzle to avoid substrate damage. By the time the stream strikes the surface, the pressure has dropped substantially.

5 In contrast, the present invention exclusively uses a very high pressure fluid jet *without* media. The pressures of the water exiting the nozzle need to be sufficient to remove the honeycomb and the braze without damaging the underlying dense metal substrate. These pressures are in the range of *tens of thousands* of pounds per square inch, many orders of magnitude beyond the pressure range taught by Carr. Secondly, there is no media included with the present invention. The fluid stream in the present method is to attack the honeycomb seal where it is adhered to the substrate surface; that is at the braze-seal intersection, without cutting into the substrate.

10 Carr discloses a media fluid stream presented to the work piece at an angle from the vertical. The reason for the inclusion an angle in the presentation of the air stream and media is, as noted in column 4, to avoid putting excessive force into the surface of the composite, and thereby cause substrate damage. See lines 47-50. In addition, a non-vertical angle allows larger numbers of entrained media particles to strike broader areas of paint since a greater surface area is presented by simple geometry to the media stream. (See Column 4, lines 64 et seq.)

15 In Figure 2 note the air stream (plus media) is presented only *generally* to the area requiring paint removal and the adjacent clean surface, encompassing portions of the top surface of paint as well as the just-cleaned substrate. Indeed, Carr specifically teaches that the best method of accomplishing cleaning is to (at Column 5, lines 3 et seq.) direct the media flow primarily at areas of paint and, as part of the process, redirect the media flow to other unremoved areas whenever removal in the first area has been substantially accomplished. In this way, "exposure of cleaned and therefore unprotected composite surface to the full force of the media blast is minimized". Carr clearly teaches away from the present invention in this respect.

20 25 As disclosed, the Carr method is limited to a general, unfocused presentation of the media stream to the painted surface, with the only criticality noted being the need to avoid the presentation of media to the cleaned surface. There is no mention in Carr of the "painted surface - cleaned substrate interface" or its importance in the cleaning process because there is none. It is only with the present technical problem solved by the claimed invention where this interface becomes important, since the non-

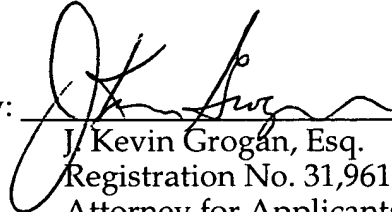
homogenous braze – honeycomb structure to be removed presents a unique parameter set, and its removal by a liquid jet was not attempted previously. Not surprisingly, there is no recognition in Carr of directing the stream to the "substrate at the base of the honeycomb" as in claim 1 of the present invention. Consequently, the teachings of Carr are not germane to the technology of the present invention.

Moreover, any attempt to combine the teachings of Carr with the teachings of McComas et al. would be either ineffective or destructive or both. Inclusion of soft glass beads into the water jet would be completely ineffective at the pressures and with the materials sought to be removed by McComas and that of the present invention. Media and the use of the fluid pressures taught by the present invention with the composite structures of Carr would simply result in their obliteration. The adjustment of the angle in Carr is to ensure that minimal energy is put into the substrate surface itself. While with the present invention, the angle must be selected to attack the very base of the honeycomb, two entirely different considerations.

In sum, the teachings of McComas et al. taken together with Schiembob, Ryan or Ackermann in view of McComas et al. have been dealt with unambiguously by the Board in the February 20 decision and have been found to be deficient in providing a sound evidentiary basis for concluding the claimed method to be obvious. The Examiner has added Carr, which on its face is not analogous art, and which by itself or in combination with the cited references fails to hint or suggest the key step of presenting the liquid stream at the base of the honeycomb. As Carr lacks any reference to the step deemed lacking in the Examiner's combination of references the Board previously determined to be inadequate, the present rejection should be withdrawn and this case at long last passed to issue. Early notice of the same is respectfully requested.

No fee is considered due for filing this Amendment. However, authorization is hereby given to charge our Deposit Account No. 13-0235 in the event any additional fees are owed.

Respectfully submitted,

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